

REMARKS

The Examiner mailed the initial Office Action on 21 October 2005. On 27 October 2005, after noticing some errors in the Office Action, Applicant's representative called the Examiner to discuss the errors. As a result of this conversation, the Examiner mailed a supplemental Office Action on 1 November 2005. The deadline for responding to the Office Action did not change.

The present invention relates to a multi-user receiver in which transmitted signals from multiple users are combined in such a way as to cancel multi-user interference. Independent claims 1 and 31 are drawn to a receiver that uses spreading code cross correlations to compute filter coefficients for an interference suppression filter. The received signal from multiple users are combined by the interference suppression filter so that, for each received signal, interference attributable to the other signals is cancelled. The Examiner rejects independent claims 1, 14, and 31 as being obvious in view of Bottomley and Jürgensen. These references, standing alone or in combination, do not teach or suggest Applicant's invention.

Bottomley discloses a channel estimator for a diversity receiver that jointly estimates the channel between each receive antenna and the transmitter. Bottomley discloses that impairment correlations can be used to generate better channel estimates. The channel estimator disclosed in Bottomley can be used in a RAKE receiver.

The patent to Bottomley is inapposite to the present invention. Bottomley relates to a single user, diversity receiver. The receiver has two receive antennas for receiving a signal from the same user. In contrast, the claimed invention is a multi-user receiver

that combines signals from different users to reduce multi-user interference. There is no teaching or suggestion in Bottomley to combine signals from different users as required by claims 1, 14, and 31. Further, with regard to claims 1 and 31, Bottomley does not teach or suggest using spreading code cross correlations to compute filter coefficients for a filter to combine signals from different users.

The patent to Jürgensen discloses a receiver that allows different users to share the same channelization code. Jürgensen teaches that different users may use the same channelization code but different scrambling codes. The different scrambling codes enable the receiver to separate signals from different users. The receiver in Jürgensen is similar in structure to a conventional RAKE receiver. After the signals from different users are separated by a descrambling circuit, the RAKE combining circuits combine the received signals from a single user with different time delays. There is no teaching or suggestion in Jürgensen of combining signals from different users to cancel multi-user interference.

In summary, neither reference cited by the Examiner teaches or suggests combining signals received from different users to cancel multi-user interference. Further, neither reference cited by the Examiner teaches or suggests the use of spreading code cross correlations to compute filter coefficients for combining the signals from different users. Accordingly, it is believed that claims 1, 14, and 31 define patentable subject matter and are allowable.

In light of the above remarks, Applicant requests that the Examiner reconsider the rejections and allow the application. Should any issues remain unresolved, Applicant requests that the Examiner call the undersigned so that such issues may be resolved expeditiously.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "David E. Bennett", written over a horizontal line.

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